

SHEET 1 OF 1

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| Substitute for forms 1449A/PTO & 1449B/PTO | ATTORNEY'S DKT NO. 005950-845 | APPLICATION NO. 10/758,679 |
| | APPLICANT Dahl, et al. | |
| | FILING DATE January 15, 2004 | GROUP 1712 |
| | THIRD INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |

| U.S. PATENT DOCUMENTS | | | | |
|-----------------------|-----------------|----------------------|---|-------------------------------------|
| Examiner Initials | Document Number | Kind Code (if known) | Name of Patentee or Applicant of Cited Document | Issue/Publication Date (MM-DD-YYYY) |
| DV | 6,576,155 | B1 | Barbera-Guillem | 06-10-2003 |
| | 6,548,171 | B1 | Barbera-Guillem et al. | 04-15-2003 |
| | 6,423,551 | B1 | Weiss et al. | 07-23-2002 |
| | 6,377,340 | B1 | Anthony et al. | 04-23-2002 |
| | 6,340,393 | B1 | Yoshida | 01-22-2002 |
| | 6,326,144 | B1 | Bawendi et al. | 12-04-2001 |
| | 6,322,901 | B1 | Bawendi et al. | 11-27-2001 |
| | 6,309,701 | B1 | Barbera-Guillem | 10-30-2001 |
| | 6,306,610 | B1 | Bawendi et al. | 10-23-2001 |
| | 6,274,837 | B1 | Windischmann et al. | 08-14-2001 |
| | 6,207,392 | B1 | Weiss et al. | 03-27-2001 |
| | 6,162,412 | | Fujimori et al. | 12-19-2000 |
| | 5,990,479 | | Weiss et al. | 11-23-1999 |
| | 5,989,947 | | Dilger et al. | 11-23-1999 |
| | 5,449,531 | | Zhu et al. | 09-12-1995 |
| | 5,382,684 | | Moini et al. | 01-17-1995 |
| | 4,985,226 | | Satoh et al. | 01-15-1991 |
| | 4,959,201 | | Satoh et al. | 09-25-1990 |
| | 4,950,463 | | Satoh et al. | 08-21-1990 |
| | 4,880,613 | | Satoh et al. | 11-14-1989 |

| FOREIGN PATENT DOCUMENTS | | | | |
|--------------------------|-----------------|----------------------|---------|----------------------------------|
| Examiner Initials | Document Number | Kind Code (if known) | Country | Date of Publication (MM-DD-YYYY) |
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| NON PATENT LITERATURE DOCUMENTS | |
|---------------------------------|---|
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| | Beveratos, A, et al., "Single Photo Quantum Cryptography", <i>arXiv:quant-ph/0206136</i> 1 (2002). |
| | Jones, R., et al., "Theory of Aggregation of Nitrogen in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.1, pp127-129 (2001) |
| | Kiflawi, I, et al., "Aggregates of Nitrogen in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.2, pp 130-133 (2001) |
| | Kiflawi, I., et al., "The Nitrogen Interstitial in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.3, pp 134-135 (2001) |
| | Kuhn, S., et al., "Diamond Colour Centres as a Nanoscopic Light Source for Scanning Near-Field Optical Microscopy", <i>Journal of Microscopy</i> 202(1):2-6 (2001) |
| | Lawson, S.C., et al., "The Effect of Transition Metals (TM) on the Aggregation Kinetics of Nitrogen in Diamond" <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A6.2, pp 172-173 (2001) |
| | Raty, J.Y., et al., "Quantum Confinement and Fullerene-like Surface Reconstructions in Nanodiamonds", <i>Physical Review Letters</i> 90(3):037401.1-037401.4 (2003) |
| | Zarda, P., "Single Photo Source", http://scotty.quantum.physik.uni-muenchen.de/exp/sps/sum.html , on-line documents, 11 pages (2001) |

| | | | |
|--------------------|--|-----------------|---------|
| Examiner Signature | | Date Considered | 1/22/07 |
|--------------------|--|-----------------|---------|

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Sheet 1 of 8

Complete if Known

| | |
|------------------------|-----------------------|
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U.S. PATENT DOCUMENTS

| Examiner Initials | Document Number | Kind Code (if known) | Name of Patentee or Applicant of Cited Document | Issue/Publication Date (MM-DD-YYYY) |
|----------------------|--------------------|-------------------------|--|--|
| | 6,433,474 | B1 | Horiuchi et al. | 08-13-2002 |
| | 6,376,276 | B1 | Oishi et al. | 04-23-2002 |
| | 6,352,884 | B1 | Yu et al. | 03-05-2002 |
| | 6,326,144 | B1 | Bawendi et al. | 12-04-2001 |
| | 6,322,901 | B1 | Bawendi et al. | 11-27-2001 |
| | 6,309,701 | B1 | Barbera-Guillem | 10-30-2001 |
| | 6,235,851 | | Ishii, et al. | 05-22-2001 |
| | 6,207,392 | B1 | Weiss et al. | 03-27-2001 |
| | 6,151,347 | | Noel et al. | 11-21-2000 |
| | 6,114,038 | | Castro et al. | 09-05-2000 |
| | 6,110,276 | | Yu et al. | 08-29-2000 |
| | 5,812,573 | | Shiomi et al. | 09-22-1998 |
| | 5,792,256 | | Kuchеров et al. | 08-11-1998 |
| | 5,747,118 | | Bunshah et al. | 05-05-1998 |
| | 5,773,830 | | Lu et al. | 06-30-1998 |
| | 5,703,896 | | Pankove et al. | 12-30-1997 |
| | 5,701,323 | | Kahr et al. | 12-23-1997 |
| | 5,656,828 | | Zachei et al. | 08-12-1997 |
| | 5,653,800 | | Kuchеров et al. | 08-05-1997 |
| | 5,632,812 | | Hirabayashi | 05-27-1997 |
| | 5,610,405 | | Inushima et al. | 03-11-1997 |
| | 5,608,666 | | Inushima et al. | 03-04-1997 |
| | 5,600,156 | | Nishibayashi et al. | 02-04-1997 |
| | 5,541,423 | | Hirabayashi | 07-30-1996 |
| | 5,531,184 | | Muranaka et al. | 07-02-1996 |
| | 5,504,767 | | Jamison et al. | 04-02-1996 |
| | 5,504,323 | | Heeger et al. | 04-02-1996 |
| | 5,478,650 | | Davanloo et al. | 12-26-1995 |
| | 5,476,812 | | Kimoto et al. | 12-19-1995 |
| | 5,470,505 | | Smith et al. | 11-28-1995 |
| | 5,454,880 | | Saraciftci et al. | 10-03-1995 |
| | 5,420,879 | | Kawarada et al. | 05-30-1995 |
| | 5,414,189 | | Chen, et al. | 05-09-1995 |
| | 5,389,799 | | Uemoto | 02-14-1995 |
| | 5,382,809 | | Nishibayashi et al. | 01-17-1995 |
| | 5,371,382 | | Venkatesan et al. | 12-06-1994 |
| | 5,352,908 | | Kobashi et al. | 10-04-1994 |
| | 5,349,209 | | Moyer et al. | 09-20-1994 |
| | 5,347,147 | | Jones | 09-13-1994 |
| | 5,331,183 | | Saraciftci et al. | 07-19-1994 |
| | 5,306,928 | | Kimoto et al. | 04-26-1994 |
| | 5,275,967 | | Taniguchi et al. | 01-04-1994 |
| | 5,273,731 | | Anthony et al. | 12-28-1993 |
| | 5,245,189 | | Sato et al. | 09-14-1993 |
| | 5,223,721 | | Iida et al. | 06-29-1993 |
| | 5,210,430 | | Taniguchi et al. | 05-11-1993 |
| | 5,210,431 | | Kimoto et al. | 05-11-1993 |

Examiner
SignatureDate
Considered

1/22/09

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Sheet

2

of

8

Complete if Known

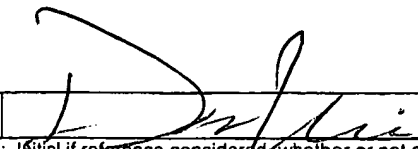
| | |
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U.S. PATENT DOCUMENTS

| Examiner Initials | Document Number | Kind Code (if known) | Name of Patentee or Applicant of Cited Document | Issue/Publication Date (MM-DD-YYYY) |
|-------------------|-----------------|----------------------|---|-------------------------------------|
| | 5,171,632 | | Heeger et al. | 12-15-1992 |
| | 5,144,380 | | Kimoto et al. | 09-01-1992 |
| | 5,132,749 | | Nishibayashi et al. | 06-21-1992 |
| | 5,117,267 | | Kimoto et al. | 05-26-1992 |
| | 5,112,775 | | Iida et al. | 05-12-1992 |
| | 5,075,757 | | Ishii et al. | 12-24-1991 |
| | 5,051,785 | | Beetz, Jr. et al. | 09-24-1991 |
| | 5,019,680 | | Chapman et al. | 05-28-1991 |
| | 5,017,734 | | Baum et al. | 05-21-1991 |
| | 4,950,625 | | Nakashima et al. | 08-21-1990 |
| | 4,949,347 | | Satoh et al. | 08-14-1990 |
| | 4,910,436 | | Collins et al. | 03-20-1990 |
| | 4,880,613 | | Satoh et al. | 11-14-1989 |
| | 4,638,484 | | Rand et al. | 01-20-1987 |
| | 4,201,955 | | Etkon et al. | 05-06-1980 |
| | 3,832,332 | | Thompson | 08-27-1974 |
| | 3,457,318 | | Capaldi et al. | 08-22-1969 |
| | 2003/0044353 | A1 | Weissleder et al. | 03-06-2003 |
| | 2002/0009274 | A1 | Gharavi | 01-24-2002 |
| | 2002/0177743 | A1 | Dahl et al. | 11-28-2002 |
| | 2003/0199710 | A1 | Liu et al. | 10-23-2003 |
| | 2004/0054243 | A1 | Timken et al. | 03-18-2004 |
| | 2004/0059145 | A1 | Liu et al. | 03-24-2004 |
| | 2004/0109328 | A1 | Dahl et al. | 06-10-2004 |

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Document Number | Kind Code (if known) | Country | Date of Publication (MM-DD-YYYY) | STATUS | | | | | | | |
|-------------------|-----------------|----------------------|---------|----------------------------------|-------------|-------------|---------------------|--------------------|---------------|------|----------|---------------|
| | | | | | Translation | Translation | Partial Translation | Eng. Lang. Summary | Search Report | IPER | Abstract | Cited in Spec |
| | 02/058139 | A2 | WO | 07-25-2002 | | | | | | | | |
| | 02/057201 | A2 | WO | 07-25-2002 | | | | | | | | |
| | 95/06019 | A1 | WO | 03-02-1995 | | | | | | | | |
| | 03/050066 | A1 | WO | 06-19-2003 | | | | | | | | |
| | 2,545,292 | | DE | 04-1979 | | | | | | | | |
| | US02/0050 | | WO | 01-17-2002 | | | | | | | | |
| | 01/83410 | A | WO | 11-08-2001 | | | | | | | | |
| | 1 043 916 | A1 | EP | 10-11-2002 | | | | | | | | |
| | 1 081 747 | A1 | EP | 03-07-2001 | | | | | | | | |

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3

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8

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NON-PATENT LITERATURE DOCUMENTS

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|-------------------|---|
| | Askeland, D.R., "The Science and Engineering of Materials" 2 nd Edition, pp 664-667, PWS-Kent Publishing Co., Boston, MA. |
| | Balaban, et al., "Systematic Classification and Nomenclature of Diamond Hydrocarbons-I", <i>Tetrahedron</i> 34:3599-3606 (1978). |
| | Baughman, G.I., "Dibromination of Adamantane", (1964). |
| | Beck, J.S., et al., "A New Family of Mesoporous Molecular Sieves Prepared with Liquid Crystal Templates", <i>J. Am. Chem. Soc.</i> 114:10834-10843 (1992). |
| | Becker et al. "A Short Synthesis of 1-azaadamantan-4-one and the 4r and 4s Isomers of 4-Amino-1-azaadamantane", <i>Synthesis</i> 11:1080-1082 (1992). |
| | Beveratos, A., et al., "Single Photon Quantum Cryptography", <i>arXiv:quant-ph/0206136 v1</i> (2002) |
| | Bingham, R.C. et al., Chapter 18 of "Chemistry of Adamantanes", <i>Springer-Verlag</i> (1971). |
| | Bishop, R., et al., "Detection of Non-Conjugative Interactions in Rigid Cyclic Molecules by Using Carbon-13 N.M.R. Shift Values", <i>Aust. J. Chem.</i> 40:249-255 (1987). |
| | Black, R.M. et al., "Adamantane Chemistry. Part 3. Abnormal Hypiodite Reactions of 2-Substituted Adamantan-2-ols; Synthetic Routes to 4-Oxahomo- and 2-Oxa-adamantanes, and 7-Substituted-bicyclo[3.3.1]nona-3-ols", <i>J. Chem. Soc. Perkins Trans.</i> 1410-418 (1980). |
| | Blaney et al, "Chemistry of Diamantane, Part II. Synthesis of 3,5-disubstituted Derivatives", <i>Synthetic Communications</i> 3(6):435-439 (1973). |
| | Boudjouk et al, "Synthesis and Reactivity of 1-Silaadamantyl Systems", <i>Journal of Organometallic Chemistry</i> 2:336-343 (1983). |
| | Boudjouk et al, "The Reaction of Magnesium with cis-1,3,5-Tris(bromomethyl)cyclohexane. Evidence For a Soluble Tri-grignard", <i>Journal of Organometallic Chemistry</i> 281:C21-C23 (1985). |
| | Bubnov et al, "A Novel Method of Synthesis of 1-azaadamantane from 1-boraadamantane", <i>Journal of Organometallic Chemistry</i> 412:1-8 (1991). |
| | Canham, L., "Gaining Light from Silicon", <i>Nature</i> 408:411-412 (2000). |
| | Cao, G.Z., "Nitrogen and Phosphorus Doping in CVD Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp. 345-347 (2001). |
| | Chakrabarti et al., "Chemistry of Adamantane. Part II. Synthesis of 1-Adamantylalkoxyalkylamines", <i>Tetrahedron Letters</i> 60:6249-6252 (1968). |
| | "Computation Concepts" <i>Chem3D Molecular Modeling and Analysis User's Guide</i> , Chapter 9, pages 123-144. |
| | Courtney, T., Johnston, D.E. McKervey, M.A. and Rooney, J.J., "The Chemistry of Diamantanes. Part 1. synthesis and Some Functionalisation Reactions", <i>J. Chem. Soc. Perkin I</i> 2691-2696 (1972). |
| | Dahl, J.E. et al., "Isolation and Structure of Higher Diamondoids, Nanometer-Sized Diamond Molecules", <i>Science</i> 299:96-99 (2003). |
| | S. Eguchi et al. in "A novel route to the 2-aza-adamantyl system via photochemical ring contraction of epoxy 4-azahomoadamantanes," <i>J. Chem. Soc. Chem. Commun.</i> , p. 1147 (1984). |
| | Fernandez, M.J., et al., "NMR Study of 1-Azatricyclo[3.3.1] ³⁻⁷ decane Derivatives", <i>J. Heterocyclic Chem.</i> 26:307-312 (1989). |
| | Fernandez, M.J., et al., "Synthesis, Structural and Conformational Study of 4- α -(or β)-p-Chlorobenzoyloxy-1-azaadamantane Hydrochloride", <i>J. Heterocyclic Chem.</i> 26:349-353 (1989). |

Examiner Signature

Date Considered

1/22/07

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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4

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8

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First Named Inventor

Jeremy E. Dahl et al.

Examiner Name

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NON-PATENT LITERATURE DOCUMENTS

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Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Fleming, I., et al., "A New Oxindole Synthesis", *J. Chem. Soc. Perkin Trans. 1*:617-626 (1991).Fort, Jr., et al., "Adamantane: Consequences of the Diamondoid Structure", *Chem. Rev.* **64**:277-300 (1964).Fox, M.A., et al., "Transmission of Electronic Effects by Icosahedral Carboranes; Skeletal Carbon-13 Chemical Shifts and Ultraviolet-Visible Spectra of Substituted aryl-*p*-carboranes (1,12-dicarba-closo-dodecaboranes)", *J. Chem. Soc., Dalton Trans.* 401-411 (1998).Fritz, G., et al., "Silicon-Carbon Compounds with a Carborundum Structure", *Angew. Chem. Internat. Edit.* **9**(6) Abstract (1970).Fritz, G., et al., "Über die Isolierung höherer Carbosilane aus der Pyrolyse des Tetramethylsilans" *Z. anorg. Allg. Chem.* **512**:103-125 (1984).A. Gagneux et al. in "1-Substituted 2-heteroadamantanes," *Tetrahedron Letters* No. 17, pp. 1365-1368 (1969).Gerzon, et al., "The Adamantyl Group in Medicinal Agents, 1. Hypoglycemic N-Arylsulfonyl-N-adamantylureas", *Journal of Medicinal Chemistry* **6**(6):760-763 (1963).Hass, et al., Adamantyloxycarbonyl, a New Blocking Group. Preparation of 1-Adamantyl Chloroformate", *Journal of the American Chemical Society* **88**(9):1988-1992 (1966).Hahn, J.M. et al., "Strongly Enhanced Stereoselectivity in the Reduction of 5-Substituted Adamantanones by Substitution of C₅ by Positive Nitrogen", *J. Am. Chem. Soc.* **114**:1916-1917 (1992).

Hawley, "Condensed Chemical Dictionary", 14th ed., John Wiley & Sons, Inc., 2001.

Heavens, O.S., "Wave Theory (1): Interference", pp 26-48 from *Insight into Optics*, John Wiley & Sons, (1991).Heavens, O.S., "Interaction of Radiation and Matter", pp 137-145 from *Insight into Optics*, John Wiley & Sons, (1991).Heavens, O.S., "Lasers", pp 244-259 from *Insight into Optics*, John Wiley & Sons, (1991).Hecht, E., "Lasers and Laserlight", pp 577-593 from *Optics*, Addison-Wesley Publishing Company, (1987).J.G. Henkel and W.C. Faith, in "Neighboring group effects in the β -halo amines. Synthesis and solvolytic reactivity of the *anti*-4-substituted 2-azaadamantyl system," in *J. Org. Chem.* Vol. 46, No. 24, pp. 4953-4959 (1981).

G.T. Hermanson in "Bioconjugate Techniques" (Academic Press, San Diego, 1996); Preface, pp. 3-16; 27-34; and 40-53.

Jackman, R.B., "Diamond optoelectronic devices", *Properties, Growth and Applications of Diamond*, M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 393-398 (2001).Jawdoskiuk, M., et al., "Photolysis and Thermolysis of 3-Azidonoradamantane. "Anti-Bredt" Imines, 2-aza-adamant-1-ene, and 4-Azaprotadamant-3-ene", *J. Chem. Soc. Perkin Trans 1*:2583-2585 (1984).John, P., "Toward Diamond Lasers", *Science* **292**:1847-1848 (2001).Johnston, C., et al., "Boron Doping and Characterisation of Diamond", *Diamond*, edited by M.H. Nazare and A.J. Neves, INSPEC pp. 337-344 (2001).Jones, R., et al., "Theory of Aggregation of Nitrogen in Diamond", *Properties, Growth and Applications of Diamond* edited by Nazare et al., Ch. A5.1, pp 127-129 (2001)Kalish, R., et al., "Doping of Diamond Using Ion Implantation", *Diamond*, edited by M.H. Nazare and A.J. Neves, INSPEC pp 321-330 (2001).Examiner
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Date

Considered

1/22/07

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|-------------------|---|
| | Kiflawi, I., et al., "Aggregates of Nitrogen in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.2, pp 130-133 (2001) |
| | Kiflawi, I., et al., "The Nitrogen Interstitial in Diamond", <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A5.3, pp 134-135 (2001) |
| | Koizumi, S., et al., "Ultraviolet Emission from a Diamond pn Junction", <i>Science</i> 292:1988-1990 (2001) |
| | Krasutsky, P.A., et al., "A New One-Step Method for Oxaadamantane Synthesis", <i>Tetrahedron Letters</i> 37(32):5673-5674 (1996). |
| | Krasutsky, P.A., et al., "Observation of a Stable Carbocation in a Consecutive Criegee Rearrangement with Trifluoroperacetic Acid", <i>J. Org. Chem.</i> 65:3926-3933 (2000). |
| | Kresge, C.T., et al., "Ordered mesoporous molecular sieves synthesized by a liquid-crystal template mechanism", <i>Nature</i> 359:710-712 (1992). |
| | Krishnamurthy et al., "Heteroadamantanes. 2. Synthesis of 3-Heterodiamantanes", <i>Journal of Organometallic Chemistry</i> , 46(7):1389-1390 (1981). |
| | Kroschwitz, J.I., ed, "Electrically Conductive Polymers" pp 174-219 from <i>High Performance Polymers and Composites</i> , John Wiley & Sons (1991) |
| | Kuhn, S., et al., "Diamond Colour Centres as a Nanoscopic Light Source for Scanning Near-Field Optical Microscopy", <i>Journal of Microscopy</i> 202(1):2-6 (2001) |
| | Kurtsiefer, C., et al., "Stable Solid-State Source of single Photons", <i>Physical Review Letters</i> 85(2):290-293 (2000). |
| | Lansbury, et al., "Some Reactions of α -Metalated Ethers", <i>The Journal of Organic Chemistry</i> 27(6):1933-1939 (1962). |
| | Lawson, S.C., et al., "The Effect of Transition Metals (TM) on the Aggregation Kinetics of Nitrogen in Diamond" <i>Properties, Growth and Applications of Diamond</i> edited by Nazare et al., Ch. A6.2, pp 172-173 (2001) |
| | Liaw, D.J., et al., "Synthesis and Characterization of New Polyamides and Polyimides Prepared from 2,2-bis[4-(4-aminophenoxy)phenyl]adamantane", <i>Macromol. Chem. Phys.</i> 200(6):1326-1332 (1999). |
| | Lippert, E., et al., "Darstellung und UV-Spektren einiger Fluorenon-Derivate", <i>Angew. Chem.</i> 71:429-430 (1959). |
| | Lin, et al., "Natural Occurrence of Tetramantane (C ₂₂ H ₂₈), Pentamantane (C ₂₆ H ₃₂) and Hexamantane (C ₃₀ H ₃₆) in a Deep Petroleum Reservoir", <i>Fuel</i> 74(10):1512-1521 (1995). |
| | Makarova, et al., "Psychotropic Activity of Some Aminoketones Belonging to the Adamantane Group" <i>Pharmaceutical Chemistry Journal</i> 34:6 (2000). |
| | Marchand, A.P., "Diamondoid Hydrocarbons-Delving into Nature's Bounty", <i>Science</i> 299 (2003). |
| | Marchand, A.P., "Polycyclic Cage Compounds: Reagents, Substrates, and Materials for the 21 st Century", <i>Aldrichimica Acta</i> 28(4):95-104 (1995). |
| | Marshall et al., "N-Arylsulfonyl-N-alkylureas", <i>Journal of Organic Chemistry</i> 23:927-929 (1958). |
| | Marshall et al., "Further studies on N-Arylsulfonyl-N-alkylureas", <i>Journal of Medicinal Chemistry</i> 6:60-63 (1963). |
| | McKervey, et al., "Synthetic Approaches to Large Diamondoid Hydrocarbons", <i>Tetrahedron</i> 36:9710992 (1980). |
| | J.J. Meeuwissen et. al in "Synthesis of 1-phosphaadamantane," <i>Tetrahedron</i> Vol. 39, No. 24, pp. 4225-4228 (1983) |

Examiner
SignatureDate
Considered

1/22/09

*EXAMINER: Initial reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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NON-PATENT LITERATURE DOCUMENTS

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Initials

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Mikhailov, B.M., et al., "Organoboron Compounds", *J. Organometallic Chemistry* 250:23-31 (1983).

Moiseev, I.K., et al., "Reactions of Adamantanes in Electrophilic Media", *Russian Chem. Reviews* 68(12):1001-1020 (1999).

Mochizuki, Y., et al., "Polarizability of silicon clusters", *Chemical Physics Letters* 336:451-456 (2001).

Mukherjee, A.K., et al., "On the Stereochemistry of the Oxidation of 5-Phenyl-2-thiaadamantane", *J. Org. Chem.* 58:7955-7957 (1993).

Newton, M.E., "Neutral ($[N_5]^0$) and ionized ($[N_5]^+$) single substitutional nitrogen in diamond", *Properties, Growth and Applications of Diamond*, M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 136-141 (2001).

Neves A.J., et al., "Optical and EPR properties of transition metals in diamond", *Properties, Growth and Applications of Diamond*, M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 167-171 (2001).

Nordlander et al., "Solvolytic of 1-Adamantylcarbonyl and 3-Homoadamantyl Derivatives. Mechanism of the Neopentyl Cation Rearrangement", *Journal of the American Chemical Society* 88:19 (1966).

Okoroanyanwu, U. et al., "Alicyclic Polymers for 193 nm Resist Applications: Lithographic Evaluation", *Chem. Mater.* 10:3329-3333 (1998).

Park, S., et al., "endo-Fullerene and Doped Diamond Nanocrystallite-Based Models of Qubits for Solid-State Quantum Computers", *J. Nanoscience and Nanotechnology* 1(1):75-81 (2001).

Parker, I.D., "Carrier Tunneling and Device Characteristics in Polymer Light-Emitting Diodes", *J. Appl. Phys.* 75(3):1656-1666 (1994).

Pasini, D., et al. *Advanced Materials* 12:347-351 (2000).

Pate, B.B., "The Diamond Surface: Atomic and Electronic Structure", *Surface Science* 165:83-142

Pavesi, L., et al., "Optical Gain in Silicon Nanocrystals", *Nature* 408:440-444 (2000)

Pereira, E., "Photoconductivity in Diamond", *Properties, Growth and Applications of Diamond*, M.H. Nazare et al., editors, University of Aveiro, Portugal, pp 243-244 (2001).

Prins, J.F., "Large Dopants in Diamond", *Diamond*, edited by M.H. Nazare and A.J. Neves, INSPEC pp 331-336 (2001).

Radziszewski, J.G., et al., "2-Azaadamant-1-ene and 4-Azapropadamant-3-ene", *J. Am. Chem.* 106:7996-7998 (1984).

Ramdas, A.K., "A1.2 Modifications to ^{12}C -diamond by the ^{13}C -isotope: Raman, Brillouin and Infrared Spectroscopy of Phonons", *INSPEC, Properties, Growth and Applications of Diamondoids* (2001).

Ramdas, A.K., "A1.3 Electronic Excitations in Isotopically Controlled Diamonds: Infrared and Raman Spectroscopy of Acceptor-Bound Holes", *INSPEC, Properties, Growth and Applications of Diamondoids* (2001).

Raty, J.Y., et al., "Quantum Confinement and Fullerenelike Surface Reconstructions in Nanodiamonds", *Physical Review Letters* 90(3):037401.1-037401.4 (2003)

Reinhardt, "Biadamantane and some of its Derivatives", *Journal of Organic Chemistry* 27:3258-3261 (1962).

Risch, N., et al., "Triple (Grob) Fragmentation. Retro-Mannish Reactions of 1-Aza-Adamantane Derivatives", *Tetrahedron Letters* 32(35):4465-4468 (1991).

Risch, N., et al., "Unusual Reorganization Reactions of 3-Azabicyclo[3.3.1]nonanes", *J. Am. Chem. Soc.* 113:9411-9412 (1991).

Examiner
Signature

Date

Considered

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Roberts, P.J., et al., "anti-Tetramantane, a Large Diamondoid Fragment", *Acta. Cryst.* **B33**:2335-2337 (1977).Sasaki, T. et al., "New Highly Strained Bridgehead Imines, 2-Azaadamant-1-ene and 4-Azaprotadamant-3-ene", *Tetrahedron Letters* **23**(47):4969-4972 (1982).Sasaki, T., et al., "Synthesis and Acidolysis of 3-endo-Azidomethyl- and 3-endo-Azido-bicyclo[3.3.1]non-6-enes. A Novel Synthesis of 4-Azahomoadamant-4-enes", *J. Chem. Soc. Perkin Trans I* 2529-2534 (1983).Sasaki, T., et al., "Synthesis of Adamantane Derivatives. 42. Novel Synthesis of 5-Methylene-4-azahomoadamantane Derivatives from 2-Methyl-2-hydroxyadamantane and Their Carbon-13 Nuclear Magnetic Resonance Spectra", *J. Org. Chem.* **43**(20):3810-3813 (1978).Sasaki, T., et al., "Photolytic Generation of Anti-Bredt Imines from 1-Azidobicyclo[2.2.2]octane, 1-Azidobicyclo[3.3.1]nonane, and 3-Azidonoradamantane", *J. Org. Chem.* **48**(22):4067-4072 (1983).Sasaki et al., "Synthesis of Adamantane Derivatives. II. Preparation of Some Derivatives from Adamantylacetic Acid", *Bulletin of the Chemical Society of Japan* **41**(1):238-240 (1968).Sasaki et al., "Substitution Reaction of 1-Bromoadamantane in Dimethyl Sulfoxide: Simple Synthesis of 1-Azidoadamantane", *Journal of the American Chemical Society* **92**:24 (1970).Sasaki et al., "Synthesis of Adamantane Derivatives. 47. Photochemical Synthesis of 4-Azahomoadamant-4-enes and Further Studies on Their Reactivity in Some Cycloadditions", *Journal of Organometallic Chemistry* **44**(21):3711-3712 (1979).Sasaki, T., et al., "Synthesis of Adamantane Derivatives. XII. The Schmidt Reaction of Adamantane-2-one", *J. Org. Chem.* **35**(12):4109 (1970).Sasaki, T., et al., "Synthesis of adamantane derivatives. 39. Synthesis and acidolysis of 2-azidoadamantanes", *Heterocycles* **7**(1):315 (1974).Scherz, P., "Semiconductors: Chapter 4", pp 123-190, from *Practical Electronics for Inventors*, McGraw-Hill (2000).Scherz, P., "Optoelectronics: Chapter 5" pp 191-212, from *Practical Electronics for Inventors*, McGraw-Hill (2000).Service, R.F., "Can Chemists Assemble a Future for Molecular Electronics?", *Science* **295**:2398-2399 (2002).Stetter, et al., "Zur Kenntnis der Adamantan-carbonsaure-(1)", *Über Verbindungen mit Urotropin-Struktur*, XVII, pp. 1161-1166 (1960).Stetter, et al., "Ein Beitrag zur Frage der Reaktivität von Brückenkopf-Carboniumionen", *Über Verbindungen mit Urotropin-Struktur*, XXVI, *Chem. Ber.* **96**:550-555 (1963).Stetter, et al., "Neue Möglichkeiten der Direktsubstitution am Adamantan", *Über Verbindungen mit Urotropin-Struktur*, XLII, *Chem. Ber.* **102**(10):3357-3363 (1969).Stetter et al., "Über Adamantan-phosphonsaure-(1)-dichlorid", *Über Verbindungen mit Urotropin-Struktur*, XLIV, *Chem. Ber.* **102**(10):3364-3366 (1969).Stetter et al., "Herstellung von Derivaten des 1-Phenyl-adamantans", *Über Verbindungen mit Urotropin-Struktur*, XXXI, *Chem. Ber.* **97**(12):3488-3492 (1964).

Stetter, H., et al., "Ringschlußreaktionen ausgehend von Bicyclo[3.3.1]nonandion-(3.7) Über Verbindungen mit Urotropin-Struktur", XXX, 3480-3487 (1964).

Suginome, H., et al., "The Replacement of the Carbonyl Group of Adamantanone by an Oxygen or sulfur Atom and the One-step Transformation of 2-Methyladamantan-2-ol into 2-Oxa-adamantane; An Efficient New Synthesis of 2-Oxa- and 2-Thiaadamantane", *Synthesis* 741-743 (1986).Examiner
SignatureDate
Considered

1/22/04

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|----------------------|---|
| | Suginome et al, "Photoinduced Transformations. 73. Transformations of Five-(and Six-) Membered Cyclic Alcohols into Five-(and Six-) Membered Cyclic Ethers-A New Method of a Two-Step Transformation of Hydroxy Steroids into Oxasteroids", <i>Journal of Organometallic Chemistry</i> 49:3753-3762 (1984). |
| | Tada, K., et al., "Optical Properties and Blue and Green Electroluminescence in Soluble Disubstituted Acetylene Polymers", <i>Jpn. J. Appl. Phys.</i> 35, part 2, No. 9A:1138-1141 (1996). |
| | Udding et al, "A Ring-opening Reaction of and Some Cyclisations to the Adamantane System. A Quasi-favorsky Reaction of a β -bromoketone", <i>Tetrahedron Letters</i> 55:5719-5722 (1968). |
| | Verhoeven, J.W., "From Close contact to Long-Range Intramolecular Electron Transfer", <i>Intramolecular Electron Transfer</i> , John Wiley and Sons, pp 603-644 (1999). |
| | von H.U. Daeniker, "206. 1-Hydrazinoadamantan", <i>Helvetica Chimica Acta</i> 50:2008-2010 (1967). |
| | Yang, X. et al., "The Synthesis and Structural Characterization of Carborane Oligomers Connected by Carbon-Carbon and Carbon-Boron Bonds Between Icosahedra", <i>Inorganica Chimica Acta</i> 240:371-378 (1995). |
| | Zarda, P., "Single Photo Source", http://scotty.quantum.physik.uni-muenchen.de/exp/sps/sum.html , on-line documents, 11 pages (2001) |
| | Zheng, S., et al, "Novel Blue Light Emitting Polymers", <i>Polymer Preprints</i> 41(1):822-823 (2002). |

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|----------------------|---|
| W | Gruber, A., et al., "Scanning Confocal Optical Microscopy and Magnetic Resonance on Single Defect Centers", <i>Science</i> 276 :2012-2014 (1997). |
| W | Search Report from International Application PCT/US04/23705 dated 09 August 2005. |
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| Examiner Signature | <i>[Signature]</i> | Date Considered | 1/22/07 |
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